Ms. Marlene H. Dortch, Secretary
Office of the Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

October 16, 2016

RE: *IB Docket No 13-213 – Terrestrial Use of the2473-2495 Mhz Band for Low Power Mobile Broadband Networks.*

Dear Ms. Dortch:

Blue Sky Information Services (BCIS) submits these comments regarding recent testing results carried out by Microsoft Inc., and the corresponding critiques by Globalstar and it's consultants. Blue Sky makes no representations regarding the validity of the claims by either party, but simply points out "inconsistencies" in the opinions of the parties involved.

Microsoft testing was flawed:

Globalstar via Roberson in their October 14, 2016 Written Exparte in the current NPRM states:

> *"the test devices and operating parameters used for Wi-Fi and TLPS are not representative of actual equipment in the field or typical operating parameters for such equipment in particular, simultaneous 100% duty cycle and near equal power levels for all IEEE channels in a consumer environment is a use-case that is notencountered in the real-worldthe test devices and operating parameters used for Wi-Fi and TLPS are not representative of actual equipment in the field or typical operating parameters for such equipment in particular, simultaneous 100% duty cycle and near equal power levels for all IEEE channels in a consumer environment is a use-case that is not encountered in the real-world".*[1]

Here Globalstar, via Roberson appears to claim that testing for interference in a fully-loaded environment is not "typical", and/or "non-representative" of industry standard interference measurement methodologies. Yet, ironically, it is a similar "fully-loaded / worst case" test regime that Globalstar via Roberson employed to highlight interference concerns of expanding exclusive use of MSS L-Band spectrum from incumbent Globalstar, to it's primary MSS competitor Iridium under RM-116972.

"*The detailed analysis described here calculates the loss in Globalstar capacity due to a fully loaded Iridium system operating in the same satellite footprint and bandwidth as a Globalstar system".*[2]

On one hand, it appears Roberson discounts interference tests in "fully-loaded" instances. While in the next, Roberson appears to embrace interfernece testing in a "fully-loaded" environment..

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[1] *https://ecfsapi.fcc.gov/file/101414430178/Globalstar%20Ex%20Parte%20Letter%20with%20Exhibits%20A%20&%20B%20-%2010.14.2016.pdf*

[2] *Globalstar Filing January 14,2015 – https://ecfsapi.fcc.gov/file/60001013521.pdf*

Is the spectrum from 2473-2495Mhz really underutilized:

2484-2500Mhz

One of the primary tenets of TLPS proponents has been that the spectrum from 2473-2500Mhz is "under-utilized". That this spectrum has laid "fallow", and that greater utilization should be a priority. The case has been presented that TLPS is the answer to this "greater utilization".

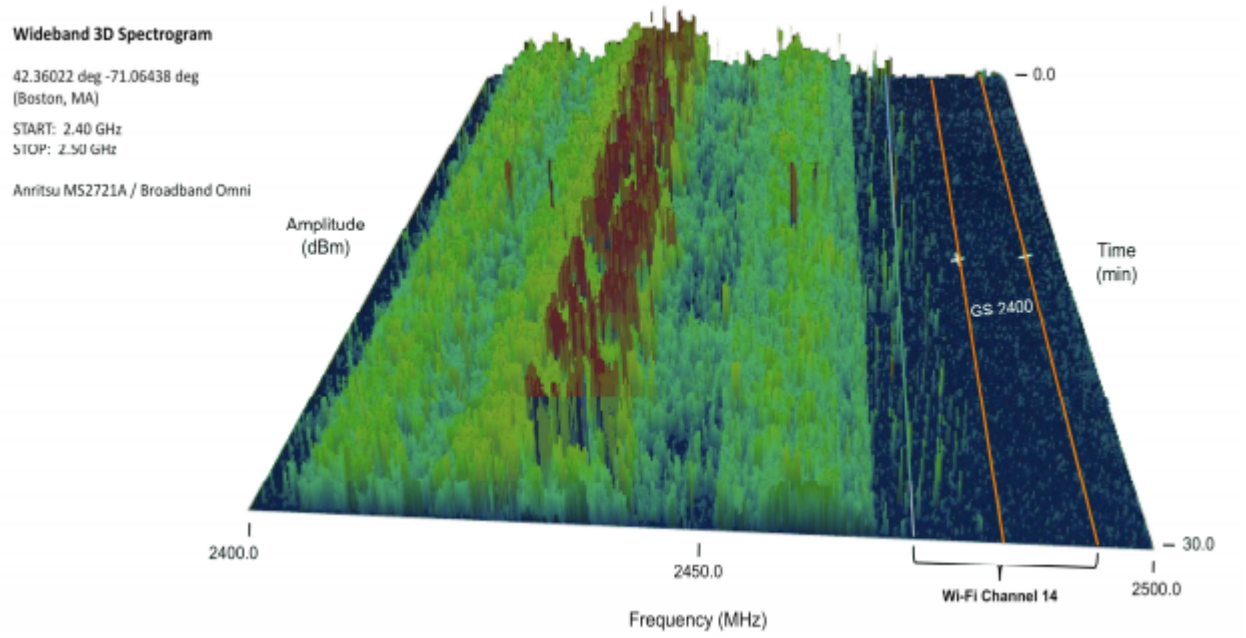
First, we look at the 2484-2500Mhz spectrum that is licesned for Earth to Space operations by Globalstar itself. Globalstar claims priority and contends that any unlicensed use of the spectrum would interfere with it's MSS operations and that any terrestrial use would require an external Network Operating System to provide intensive coordination between the MSS segment and potential terrestrial users.

Globalstar stated the following in it's March 14th , 2014 filing under RM-11697[3].

*"Globalstar utilizes the full L Band and the full S Band in its Big LEO spectrum on a daily basis throughout its global coverage area to provide critical voice and data communications, including life-saving communications associated with its SPOT line of consumer personal tracking devices"*

2473-2484Mhz

TLPS proponents have also made the case that 2473-2484Mhz is under-utilized. TLPS proponents have provided impressive 3D Spectrograms to highlight this opinion.




Indeed, when you view this TLPS proponent provided 3D Spectrogram, it appears that the entire spectrum that encompasses IEEE Wi-Fi Channel 14 is "under-utilized". But we know from Globalstar's own statements that the 2483-2500Mhz block is fully utilized for MSS FDD receive applications.

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*3https://www.fcc.gov/ecfs/filing/6017607414/document/7521092671*

So even though it may appear, via, the 3D spectrogram, that the spectrum from 2483-2500 is under-utilized. We know from Globalstar's own statements that it is in fact, fully-utilized. The fact that receiver use is not displayed in the spectrogram does not mean that the spectrum is not being used. for the receive portion of FDD transmissions.

Likewise, we have heard from many industry groups whose unlicensed consumer products use and depend on a low noise environment that the 2473-2484Mhz spectrum provides for millions of low-power devices.

Wi-Fi is is seen as a "mature market" in the United States[4], with growth seen mainly from upgrades to newer technologies on a replacement basis. Yet, we hear almost daily about the approaching "Internet of Things" IOT. Hundreds of millions, if not billions of these devices are projected over the next 15 years. A majority of these "IOT" devices will be "wearable" devices such as health monitoring devices, etc. These low-power devices will surely require a low noise environment such as that required by modern GPS receivers. Just imagine if we had a 3D Spectrogram of our GPS frequencies. It would look completely under-utilized. Sound spectrum policy has kept Broadband transmissions out of our GPS receiver spectrum ecosystem. Sound spectrum policy should maintain a low noise environment in unlicensed spectrum for the future of the"Internet of Things".

**Moving forward, by stepping back:**

Perhaps the best solution is to create a win-win for all interested parties, and the consumer? To do this, we must step backwards to unwind policies of the past that have turned previous attempts at higher terrestrial utilization of Globalstar's MSS S-band spectrum, into failures. Let's step backward then forward by making ATC already authorized in the S-band workable from a business perspective. Globalstar has invested billions of dollars into satellite infrastructure. Perhaps we should focus our attention at rolling back the regulatory barriers that have prevented the promise of ATC from reaching fruition? To do this, we must remove burdensome ATC gating obligations that have only stymied higher utilization and innovation. A reality that can be achieved by providing full, un-gated ATC authority in the 2484-2500Mhz spectrum as requested in the original Globalstar Petition.

Respectfully,

Richard Foley
Blue Sky Information Services
5674 El Camino Real
Carlsbad, CA 92008

[4]http://www.marketsandmarkets.com/PressReleases/global-wi-fi.asp